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PATENT

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TITLE: PHENYLETHYL BENZOATE FOR USE IN COSMETICS, TOILETRIES AND PERSONAL CARE PRODUCTS

SPECIFICATION

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to benzoic acid esters, and more particularly to the use of phenylethyl benzoate as a cosmetic ingredient for toiletry and cosmetic formulations particularly as a diluent, solvent and liquid carrier, as well as an emollient additive.

2. Description of the Related Art

Esters are known for a variety of different applications for cosmetic, pharmaceutical and medicinal purposes. Numerous references describe the production and use of benzoic acid esters. None of these references teach or suggest the specific uses of the benzoate ester of this invention in cosmetics, toiletries and personal care products for other than perfume fragrance purposes.

For example, benzoate esters of certain alcohols and alcohol mixtures and their uses are disclosed in assignee's U.S. Patent Nos. 4,323,694; 4,322,545; and 4,275,222, all to Scala; and U.S. Patent Nos. 4,791,097; 5,270,461; and 5,271,930, all to Walele et al.

U.S. Patent Nos. 5,500,138; 5,668,094 and 6,491,728 to Bacon et al. discloses liquid and solid fabric softener compositions and liquid laundry detergent compositions, combined with enduring perfumes, such as phenylethyl benzoate.

U.S. Patent Nos. 5,843,881 and 6,126,930 to Dubois et al. disclose a composition for use on the skin, hair or mucosa comprising an alcohol, a personal care polymer, and an alcohol-masking perfume component, such as phenylethyl benzoate, which reduces the alcohol aroma and the stinging sensation in the nose or throat due to the alcohol when the compositions are sprayed or atomized.

U.S. Patent Nos. 5,540,853; 5,833,999; 5,849,310 and 6,086,903 to Trinh et al. disclose personal treatment compositions containing from about 0.001% to about 50% enduring perfume compositions selected from the group including phenylethyl benzoate.

Phenylethyl benzoate is known to have utility as a perfume ingredient for use in perfumes, colognes, eye and throat oils, stick rouge, skin moisturizers, cleansing creams, and after-bath splash and lotions.

However, among the foregoing patents, none have the unique properties of the ester compositions described and claimed herein. None disclose or suggest phenylethyl benzoate that is substantially non-greasy and non-oily, has very low cloud point and pour point, has a high refractive index, a bland odor, low toxicity and is stable. These are vital properties in numerous applications, as the esters may be incorporated into personal care products, cosmetics and toiletries, including sunscreens and antiperspirants.

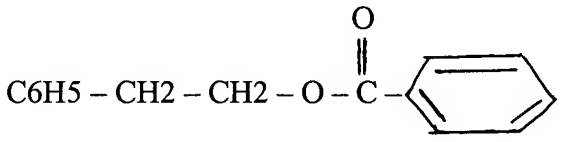
3. Object And Summary Of The Invention

It is an object of the invention to provide phenylethyl benzoate for use as a diluent, solvent and liquid carrier, as well as an emollient additive, in cosmetics, toiletries, and personal care products, such as sunscreens and antiperspirants.

DESCRIPTION OF THE INVENTION

It has now been found that phenylethyl benzoate has unique properties in that it is substantially non-greasy and non-oily, has a very low cloud point and pour point, has a bland odor, low toxicity, high refractive index, and is stable. These properties make the ester useful as a diluent, vehicle or liquid carrier, emollient or solubilizer, and as an emollient additive for toiletry and cosmetic formulations and personal care products, such as sunscreen creams, hair creams, hand cleaners, bath oils, cold creams, electric pre-shaves, finger nail polish, topical pharmaceutical ointments, lipsticks, skin lotions and creams, as well as other formulations. The foregoing list is only exemplary of the type of compositions in which the esters of this invention may be used, and, as such, is not to be considered limiting.

The benzoate ester of the invention is represented by the following formula:



The chemical name and proposed INCI name of the compound is Phenylethyl benzoate.

The phenylethyl benzoate ester of the invention has the following featured properties:

Ease of emulsification.
High refractive index.
Emolliency with good after feel.
Lack of greasiness/ pleasant skin feel.
Lack of oiliness while imparting good lubrication.
Low cloud point and pour point.
High spreading coefficient.
Alcohol solubility.
Additive for Antiperspirant formulations.
Low toxicity.
Hydrolytic stability.
Solvent for many skin and hair additives including sunscreens

The phenylethyl benzoate of the invention is prepared as described in Examples 1 and 2 below. The processes of Examples 1 and 2 differ in the catalyst used.

The phenylethyl benzoate of the invention is advantageous in that it is non-oily, tasteless, inert, essentially nontoxic and non-sensitizing, and is stable. Phenylethyl benzoate is useful as an emollient, solubilizer, moisturizer, plasticizer, sunscreen vehicle/solvent, de-oiler/degreaser, and emulsifier/co-emulsifier. Further, phenylethyl benzoate possesses other unusual physico-chemical properties, in particular, a higher spreading coefficient and high refractive index that can make it a beneficial and unique component of a sophisticated delivery system such as in hand, face, and body creams and lotions. The foregoing list is only exemplary of the type of composition in which phenylethyl benzoate may be used and as such, is not to be considered limiting.

The amount of phenylethyl benzoate used as a diluent, solvent and liquid carrier, as well as an emollient additive, in an aqueous surfactant composition is dependent on the type of composition, the type and quantity of other ingredients used, and the amount and type of functional additives that are utilized. Typically, the amount of phenylethyl benzoate used ranges from about 0.5% to about 50%, by weight, of the personal care compositions. Preferably, from about 0.5% to about 10% of phenylethyl benzoate is used.

Phenylethyl benzoate ester may be used in skin care and personal care compositions. The amount used in skin care compositions is dependent on the type of skin care composition, the type and quantity of cosmetic ingredients used, and the amount and type of functional additives. Typically, the amount ranges from about 0.5% to about 80% by weight of the skin care composition. For example, a facial cream may have only about 0.5% of the phenylethyl benzoate

ester, whereas a massage oil may have up to about 80% by weight. Still higher amounts may be used in other compositions; for example, up to 95% of the ester may be used in bath oils.

Further, the phenyethyl alcohol benzoate ester described herein serves as a solvent and/or vehicle for solid organic, ultraviolet (uv) absorbers. The ester of the invention also functions as a plasticizer for polymers contained in skin care compositions, and acts as an auxiliary suspending agent capable of assisting in the suspension of ingredients in skin care compositions. The phenyethyl benzoate also may function as a dye leveling agent and dye carrier. Thus, the phenylethyl benzoate ester when used in skin care compositions serves not only as an emollient and carrier but also exhibits one or more other functions. The skin care compositions may take the form of a liquid, cream, gel, paste, bar, granules, stick, emulsion, dispersion, suspension, powder, foam or spray, or other forms.

A particularly useful composition of this invention is for use in sunscreen compositions and antiperspirant compositions. Typically, the amount of phenylethyl benzoate used in sunscreen compositions ranges from about 0.5% to about 25% by weight of the sunscreen composition, and preferably from about 1% to about 15% by weight of the sunscreen composition. Typically, the amount of phenylethyl benzoate used in antiperspirants ranges from about 0.5% to about 25% by weight of the antiperspirant composition, and preferably from about 1% to about 10% by weight of the antiperspirant composition. The most commonly used antiperspirant actives are aluminum chlorohydrate and aluminum zirconium tetrachloro-glycine.

Typical adjunct ingredients in skin care compositions are selected from the group consisting of conditioning agents, fatty substances, organic solvents, thickening agents, emollients,

emulsifiers, humectants, softeners, lubricants, penetrants, plastisizers, antioxidants, agents for combating free radicals, opacifiers, stabilizers, emollients, solvents and co-solvents, dispersants, silicones, alpha-hydroxy acids, buffers, chelating agents, foaming agents, antifoaming agents, moisturizing agents, vitamins, insect repellents, fragrances, preservatives, surfactants, anti-inflammatories, pH adjusters, chelating agents, fillers, polymers, propellants, basifying or acidifying agents, odor masking agents, tanning agents, colorants and mixtures thereof.

The following are non-limiting examples of uses of the ester of the invention in specific cosmetic or personal care products as a diluent, solvent, liquid carrier, and emollient additive. In the Examples, as well as throughout this application, the chemical and scientific symbols have their customary meanings and all percents are weight percents unless otherwise specified.

Example Nos. 1 and 2 describe preparation of a Benzoate ester of phenylethyl alcohol, referred to herein as Finsolv SUN. Examples 3 through 21 identify formulations using the ester of the invention, as well as solubilities of the ester. For ease of identification, each ester is identified by both an Example Number and a Reference No., where applicable.

Color in the Examples below is measured using ASTM D-1209 on the APHA scale of the American Public Health Association. APHA scores less than 20 denote good color, with scores of 5 to 10 signifying superior color, i.e., clear color or absence of color. APHA scores over 20 are not good, as a yellow tint is visible, becoming progressively more colored as the APHA scores increase.

Example #1 (Ref. # 129-10)
Preparation of Benzoate Ester of Phenylethyl alcohol (FINSOLV SUN)

In a 2,000 ml. four neck round bottom flask equipped with glass stirrer, distillation head,

condenser, thermometer and receiver, added 488.61 grams (1.0 moles) of Phenylethyl alcohol and 511.84 grams (1.05 moles) of Benzoic Acid. The temperature was raised to 60°C with a good flow of Nitrogen. At 60°C added 0.9 grams of Stannous Oxalate and continued to heat to 240°C maintaining a good flow of Nitrogen over 120 minutes and held for 2 hours. The distillate as water of reaction collected was 70 grams against theoretical estimates of 76 grams. The ester had the acidity of 20 mg KOH/g and it was cooled to 40°C under nitrogen. The crude ester was treated with 200 grams of deionized water containing 20 grams of Potassium Carbonate and 20.00 grams of Potassium Chloride at 80°C. When acidity of ester was <0.1mg KOH/gram, it was treated with 5.0 grams of Hydrogen Peroxide. The top layer containing the benzoate ester was collected. It was vacuum stripped at 115°C-120°C and 20-25 mm of Hg vacuum. The liquid benzoate of this reaction was then treated with 0.2 grams each of magnesol, celaton FW 60 (diatomaceous earths) at 50°C. The product was filtered through a Filter Press with Whatman Paper #4. The net yield of the benzoate ester product was 935 grams.

EXAMPLE #2 (Ref. # 129-154)
Preparation of Benzoate Ester of Phenylethyl alcohol (FINSOLV SUN)

In 2000 ml. four neck round bottom flasks equipped with glass stirrer, distillation head, condenser and receiver added 488.61 grams (1.0 moles) of Phenylethyl alcohol and 511.84 grams (1.05 moles) of Benzoic acid. The temperature was raised to 60°C with a good flow of Nitrogen. At 60°C added 3.0 grams of Methane sulfonic acid and continued to heat to 150°C maintaining a good flow of nitrogen over 60 minutes and held for 2 hours. The distillate collected was 70 grams against theoretical estimates of 76 grams. The ester had the acidity of 20 mg KOH/g. The reaction

product was treated with 200 grams of deionized water containing 20.0 grams of sodium carbonate, 3 grams hydrogen peroxide and 20 grams of sodium sulfate at 80°C. The top layer containing the Benzoate ester was collected. It was vacuum stripped at 115°C-120°C and 20-25mm of Hg vacuum. The liquid Benzoate of this reaction was then treated with 0.2 grams each of magnesol, celetom FW 60 (diatomaceous earths) at 50°C. The product was filtered through a Filter Press with Whatman Paper #4. The net yield of the Benzoate ester product was 946 grams. An analysis of the phenylethyl benzoate ester was conducted. Table I sets forth the typical physical and chemical properties that were observed.

TABLE 1

% Actives	100
Appearance	Liquid
Odor	Rosy Odor
Freezing Point	-8°C
Refractive index (at 25°C)	1.5600
Surface Tension (°C)	31.5
Spreading Coeffecient (°C)	32.75
Viscosity (CPS)	40
Color (APHA)	70
% Water	0.01
Saponification value mg – KOH/gram	245
Specific gravity (at 25°C)	1.094
Interfacial Tension (°C)	7.75

The liquid organic sunscreens that are commonly used are octylsalicylate (os) and octyl-methoxycinnamate (omc), aminobenzoic acid, cinoxate, homosalate, menthyl anthranilate, octocrylene, octisalate, padimate O, phenylbenzimidazole sulfonic acid, sulisobenzone, trolamine salicylate, and ethylmethoxycinnamate.

The two most commonly used solid organic crystalline sunscreens are Benzophenone–3 (2 hydroxy 4-methoxy benzophenone) and Parsol 1789 (Butyl–methoxy dibenzoyl methane, also known as Avobenzone). These two solid, organic crystalline sunscreens are difficult to dissolve and keep in solution for use in sunscreen formulations for optimal SPF (Sun Protection Factor). Higher solvency for a sunscreen active is desirable as it allows higher concentrations of the sunscreen active ingredient in a formulation. This advantageously raises the SPF ratings for the formulations. Phenyethyl alcohol benzoate ester exhibits superior ability to dissolve solid organic crystalline sunscreens and keep them in solution, as compared to commonly used and available sunscreen solvents. The ester of the invention is also useful for other solid organic sunscreens, such as methoxydibenzoylmethane.

The ratio of Phenylethyl Benzoate to Benzophenone-3 or to Parsol 1789 (Avobenzone) sunscreen may range from 2:1 (a 33% strength/concentration) to 3:1 (25% strength/concentration) to 9:1 (10% strength /concentration) or even 19:1 (5% strength/concentration) ratio.

EXAMPLE #3

Superior Solvation or Dissolution of Solid Organic Sunscreen Solutes in Phenylethyl Benzoate Solvent (Finsolv SUN) as Compared to Finsolv TN

Solutions in various ratios of phenylethyl benzoate (Finsolv SUN) to Benzophenone-3 or to Parsol 1789 (also known as butylmethoxydibenzoylmethane or Avobenzone) sunscreen were prepared. A solution in the ratio of 3:1 (25% concentration) so prepared is a clear liquid at 15°C, which property indicates the superior solvation or dissolution of the sunscreen solutes in the phenylethyl benzoate solvent.

A solution of phenylethyl benzoate (Finsolv SUN) to Benzophenone-3 or to Parsol 1789

(Avobenzone) sunscreen in the ratio of 6:1 (14% strength/concentration) is a clear liquid at -12°C. This property indicates the superior solvation or dissolution of the sunscreen solutes in the phenylethyl benzoate solvent (Finsolv SUN) as compared to other benzoate esters. For instance, a solution of C12-15 alkyl benzoate (Finsolv TN) and Benzophenone-3 or Parsol 1789 (Avobenzone) sunscreen is not clear below -6°C.

As shown in Example #3A below, the high solvency exhibited by the phenylethyl benzoate ester of the invention for solid crystalline organic sunscreens is an advantageous effect in formulating sunscreen products for the skin care markets. Thus, besides being a cosmetic emollient, phenylethyl benzoate ester is an excellent solvent and carrier for the above-mentioned solid organic sunscreens. A further advantageous aspect of the ester of the invention, besides acting as a solubilizer for solid sunscreens, is to render anti-washoff effect to the sunscreen. This effect is very attractive in formulating long lasting sunscreen products allowing the sunscreen to remain on the skin for a longer period of time.

Example #3A (Ref # 134-65)
Solubilities of Active Sunscreens and Chemical Tanning Agent in Various Esters (at 25°C)

TABLE 2
Solubilities of Solid Active Sunscreens and Chemical Tanning Agent in Various Esters (at 25°C)

Sunscreen or Chemical Tanning Agent	Finsolv SUN	Finsolv TN	Finester EH-25	Finsolv BOD
Benzophenone -3	46.15	15	11	10
Parsol 1789	48.71	13	10	9
Salicylic acid	7	3	<1	<1
Dihydroxyacetone	2	<1	<1	<1

Benzophenone-3, Parsol 1789 and Salicylic acid are sunscreens. Dihydroxyacetone (or

"DHA" for short) is a self-tanning agent, i.e., a chemical tanning agent. All four compounds are solid compositions, and exhibit various solubilities in Phenylethyl benzoate. Phenylbenzoate is a superior solublizer for solid sunscreens such as Benzophenone-3 and Avobenzone.

Example #3B (Ref. No. 134-72)
Solubility of Phenylethyl Benzoate (Finsolv SUN)

The solubility characteristics of Phenylethyl Benzoate (Finsolv SUN) are tabulated in Table 3 below. It is soluble in most commonly used solvents, emollients and vehicles employed in cosmetic product formulations.

TABLE 3
SOLUBILITY OF PHENYLETHYL BENZOATE

Water	-
Ethanol	+
Isopropanol	+
Mineral Oil	-
Glycerin	-
Propylene Glycol	-
Dimethione Copolyl (Silwet 7604& 7230)	+
Cyclomethicone (Dow Corning Fluid 244)	-
Dimethicone (Dow corning fluid 200	-
Isopropyl Myristate	+
Isopropyl Palmitate	+
Finsolv SLB-101	+
Finsolv SLB-201	+
Finsolv PL 62	+
Finsolv PL 355	+
Finsolv BCO 115	+
Finsolv BCR 111	+
Finsolv BOHS 111	+
Finsolv TN	+
Finsolv TPP	+
Finsolv EMG 20	+
Finsolv BOD	+
Finsolv SB	+
Finsolv PG22	+
Finester EH 25	+
Finester DOM-R	+

Example #4 (Ref. No. 134-150)
Soap Bar Evaluation

An evaluation of the use of phenylethyl benzoate in bar soaps was conducted as described below. The results show improvements in the properties of bar soaps upon inclusion of the phenylethyl benzoate ester of the invention.

Control bars: A soap bar containing 100% Syndet Base 96-143-1 available from Finetex, Inc. and a Combo Bar comprising 25% Syndet Base 96-143-1 and 75% Bradford soap base 80/20 have the following features during processing of the soap bars and after washing with said bars:

- Runs well in the extruder
- Good body with consistency, transparent or pearlescent effect
- Good body texture
- When using the bar to wash hands with water, it gives a creamy foam, with large, but not compact bubbles
- After drying a soft feel was observed with no stickiness, and no gloss or shine observed.

To the above control soap bar containing 100% Syndet Base 96-143-1 and to the above control combo bar comprising 25% Syndet Base and 75% Bradford soap base 80/20, was added 1% Finsolv SUN. The typical processing was followed, i.e., Syndet Base 96-143-1 or combo bar (25% Syndet Base 96-143-1 and 75% Bradford Tallow/coco soap base 80/20) was added to the amalgamator with Finsolv SUN, fragrance was incorporated and the bar colored and refined as usual. The resulting bar was found to have the following additional beneficial properties in addition to those properties described above for the control bars:

Syndet and combo bars containing Finsolv SUN were found to run excellently in the extruder, have excellent body with better consistency than the control bars, have excellent transparent or pearlescent effect, and have excellent body texture. When washed with water, the

bars produce dense bubbles, and a slippery feel was observed when the bars were wet. After drying, no stickiness was found on the skin. It had a nice, soft, silky feel and excellent shine and gloss were observed. The skin felt well moisturized.

Example #5 (Ref. Nos. 134-81, 134-82)
Transparent Combo Bar

Table 4
Transparent Combo Bar Formulations

	Formulation A (134-82)	Formulation B (134-81)
Glycerin	21.18	21.18
Sorbitol 70%	23.58	23.58
Triethanolamine	163	163
Finsolv TN	12	--
Finsolv SUN	--	12
Surfine AZI-A	15	15
EDTA-NA	1.2	1.2
Sodium Chloride	3	3
Water	46.92	46.92
Coco fatty acid	25.5	25.5
Stearic acid	25.5	25.5
Sodium stearate	9	9
Soap base 80/20	239.92	239.92
Tauranol I 78 C	30.1	30.1

Procedure:

Add the ingredients listed in Table IV from Glycerin to water in sequence, heat to 60°C with mixing. Add coco fatty acid and stearic acid and mix. Heat to 70°C and allow to dissolve. Add sodium stearate and soap base and mix. When it becomes clear, add Tauranol I 78 C. Mix and adjust moisture until clear liquid is formed. Discharge after deaeration.

Evaluation of the Combo Bars: Clarity and emolliency is excellent in formulation A with Surfine AZI-A and Finsolv TN. Clarity is better in formulation B with good emolliency and feel.

Example #6 (Ref. # 134-84)
Hand and Body Lotions with Sunscreen (Formulations A, B, C & D)

TABLE 5

	A	B	C	D
I. Water	75.75	75.75	75.75	75.75
Carbomer (Ultrez)	0.15	0.15	0.15	0.15
Sorbitol 70%	2	2	2	2
Tetrasodium EDTA	0.2	0.2	0.2	0.2
II. Isopropyl Myristate	--	--	6.5	--
Isopropyl Palmitate	--	6.5	--	--
Finsolv SUN	6.5	--	--	6.5
Cetyl alcohol	0.7	0.7	0.7	0.7
Stearic acid	1.5	1.5	1.5	1.5
Glyceryl Stearate SE	.8	.8	.8	0.8
Cetearyl alcohol & Ceteareth-20	1	1	1	1
Parsol 1789	--	--	--	3.0
Octylmethoxy cinnamate	7	7	7	--
Octyl salicylate	3	3	3	3
Benzophenone - 3	3	3	3	3
III. Triethanolamine 99%	0.9	0.9	0.9	0.9
Glydant	0.2	0.2	0.2	0.2

Procedure: Disperse Carbomer in water. Heat to 70°C, then add sorbitol and Tetrasodium EDTA. Add all stage II ingredients together and heat to 70°C. Add II to I with good mixing. Add triethanolamine, continue mixing until it comes to 45°C. Add Glydant, continue mixing to room temperature, and discharge.

Formulations A, B, C and D so prepared were tested for skin feel, emolliency, slip, stickiness, and moisturizing effect, as measured on a scale of 1 to 5, with 1 representing the best and 5 representing poor. Results are as follows.

	A	B	C	D
Skin feel	2	3	4	2
Emolliency	2	4	3	1
Slip	2	5	4	2
Stickiness	1	4	3	1
Moisturizing effect	2	4	5	2

Example #7 (Ref # 134–85)
Waterproof Sunscreen Lotions (Formulations A, B, C & D)

TABLE 6

		A	B	C	D
I	Deionized water	72.75	72.75	72.75	72.75
	Hydroxypropylcellulose (1% solution)	10	10	10	10
	Quaternium15	0.15	0.15	0.15	0.15
	Disodium EDTA	0.05	0.05	0.05	0.05
II	octylmethoxycinnamate	7	7	7	--
	Parsol 1789	--	--	--	2
	octylsalicylate	3	3	3	3
	oxybenzone	2	2	2	2
	Finsolv SUN	4	--	--	4
	Isopropylmyristate	--	4	--	--
	Isopropylpalmitate	--	--	4	--
	Carbopol 954	0.25	0.25	0.25	0.25
	Pamulen TR-1	0.2	0.2	0.2	0.2
	Methylparaben	0.05	0.05	0.05	0.05
	Propylparaben	0.15	0.15	0.15	0.15
III	Triethanolamine 99%	0.4	0.4	0.4	0.4

Procedure:

1.Prepare I by mixing until homogeneous.

2. Mix first four of II ingredients in a separate vessel and stir until Oxybenzone is dissolved.

3. Disperse the last four of II ingredients, with mixing.

4. Add II to I with agitation, continue mixing 40 minutes until smooth.

5. Add III, stirring vigorously until smooth.

6. Discharge.

Formulations A, B, C and D so prepared were tested for skin feel, emolliency, slip, stickiness, water rinse-off resistance and moisturizing effect, as measured on a scale of 1 to 5 with 1 representing the best and 5 representing poor. Results are as follows:

	A	B	C	D
Skin feel	2	4	4	2
Emolliency	2	5	4	1
Slip	2	4	3	2
Stickiness	2	4	5	2
Water rinseoff resistance	2	4	3	2
Moisturizing effect	1	3	4	1

Example # 8 (Ref # 134-86)
High SPF Sunscreen Lotions (Cold Process) (Formulations A, B, & C)

TABLE 7

	A	B	C
I. Abil WE09	5	5	5
Cyclomethicone	3	3	3
Finsolv SUN	8	--	--
Isopropyl Myristate	--	8	--
Isopropyl Palmitate	--	--	8
Abil Wax W9801	1	1	1
Octylmethoxycinnamate	3	3	3
Octylsalicylate	3	3	3
Benzophenone-3	2	2	2
II. Water	68.4	68.4	68.4
Hydroxyethylcellulose (Natrosol 250 HHR CS)	0.8	0.8	0.8
SodiumChloride	0.8	0.8	0.8
Natrlfine TP-T	5	5	5

Procedure:

1. Combine ingredients of stage I. Mix well.
2. Dissolve Hydroxyethylcellulose into vortex of the agitating water phase. Allow the

cellulose to fully hydrate prior to adding the sodium chloride. Add Natrlfine TP-T. Mix until uniform.

3. Add II slowly into I with slow agitation.

4. Homogenize.

Formulations A, B and C so prepared were tested for skin feel, emolliency, slip, water rinse-off resistance and moisturizing effect, as measured on a scale of 1 to 5 with 1 representing the best and 5 representing poor. Results are as follows:

	A	B	C
Skin feel	2	3	4
Emolliency	2	4	3
Slip	2	3	3
Water rinse-off resistance	1	3	3
Moisturizing effect	2	4	4

Example #9 (Ref. # 134-91)
High SPF Sunscreen Lotion

TABLE 8

	A	B	C
I. Abil WE_09	5	5	5
Cyclomethicone	3	3	3
Finsolv SUN	8	--	--
Isopropyl Myristate	--	8	--
Isopropyl Palmitate	--	--	8
Abil Wax W9801	1	1	1
Octylmethoxycinnamate	3	3	3
Octylsalicylate	3	3	3
Benzophenone-3	2	2	2
II Water	68.4	68.4	68.4
Hydroxyethylcellulose (Natrosol 250 HHR CS)	0.8	0.8	0.8
Sodium chloride	0.8	0.8	0.8
Natrlfine 137-T	5	5	5

Procedure:

1. Combine ingredients of stage I. Mix well.

2. Dissolve Hydroxyethylcellulose into vortex of the agitating water phase. Allow the cellulose to fully hydrate prior to adding the sodium chloride. Add Natrlfine 137-T. Mix until uniform.

3. Add the ingredients of II slowly into the ingredients of I, with slow agitation.

4. Homogenize.

Formulations A, B and C so prepared were tested for skin feel, emolliency, slip, water rinse-off resistance and moisturizing effect, as measured on a scale of 1 to 5 with 1 representing the best and 5 representing poor. Results are as follows.

	A	B	C
Skin feel	2	3	4
Emolliency	2	4	3
Slip	2	3	3
Water rinse-off resistance	1	3	3
Moisturizing effect	2	4	4

Example #10 (Ref. # 134-92)
Sunblock Cream

TABLE 9

	A	B	C
I. Water	67.7	67.7	67.7
Magnesium Aluminum Silicate	1.5	1.5	1.5
Propylene glycol	3	3	3
Triethanolamine	0.6	0.6	0.6
II. Benzophenone -3	5	5	5
Finsolv SUN	7.5	--	--
Isopropyl Myristate	--	7.5	--
Isopropyl Palmitate	--	--	7.5
Mineral oil	4	4	4
Stearic acid	2.2	2.2	2.2
Glyceryl stearate	0.5	0.5	0.5
Cetyl alcohol	0.5	0.5	0.5
Octylmethoxycinnamate	7.5	7.5	7.5

Procedure:

1. Heat water to 80°C. Add Magnesium Aluminium Silicate slowly with stirring, mix until smooth.

2. Add remaining ingredients to I, and mix until smooth while maintaining temperature.

3. Heat the ingredients of II to 75°C, and add to the ingredients of I.

4. Mix until cool to 45°C, and discharge.

Formulations A, B and C so prepared were tested for skin feel, emolliency, slip, moisturizing effect and water rinse-off resistance, as measured on a scale of 1 to 5 with 1 representing the best and 5 representing poor. Results are as follows:

	A	B	C
Skin feel	2	4	5
Emolliency	2	3	4
Slip	2	3	4
Stickiness	2	3	3
Moisturizing effect	1	3	2
Water rinse-off resistance	2	3	4

Example #11 (Ref # 134-93)
Non-Whitening Antiperspirant Stick

TABLE 10

		A	B	C
I.	Cyclomethicone	39	39	39
	Stearyl Alcohol	18	18	18
	Hydrogenated castor oil	5	5	5
	Finsolv SUN	5	--	--
	Isopropyl Myristate	--	5	--
	Isopropyl palmitate	--	--	5
	Finsolv116	10	10	10
II.	Aluminum Zirconium tetrachlorohydroxy glycine	20	20	20
	Talc	2	2	2
	Silica	1	1	1

Procedure:

1.Combine the ingredients of I and heat to 75°C with mixing.

2. Add II powders. Mix 15 minutes or until completely dispersed. Maintain at 75°C.

3. Cool to 55°C, and mold sticks.

Formulations A to C so prepared were tested for emolliency, skin feel, slip and stick structure, on a scale of 1 to 5 with 1 representing the best and 5 representing poor. Results are as follows.

	A	B	C
Emolliency	2	4	4
Skin feel	2	3	3
Slip	1	3	4
Stick structure	1	2	3

Example #12 (Ref #134-94)
Clear Deodorant Stick

TABLE 11

	A	b	C
Propylene glycol	71	71	71
Water	14	14	14
Finsolv SUN	3	--	--
Isopropyl Myristate	--	3	--
Isopropylpalmitate	--	--	3
Sodium Stearate	5	5	5
Triclosan	0.2	0.2	0.2
Pentadoxynol-200	6.6	6.5	6.5
Triethanolamine 99%	0.3	0.3	0.3

Procedure: Charge all ingredients into a suitable vessel. Heat to 80°C, with mixing, allowing all to dissolve. Cool to 60°C and cast into stick molds. Formulations A to C so prepared were tested for skin feel, slip, stick structure, emolliency and tackiness on a scale of 1 to 5, with 1 representing the best and 5 representing poor. Results are as follows:

	A	B	C
Skin feel	2	4	3
Slip	2	4	3
Stick structure	1	3	3
Emolliency	2	5	4
Tackiness	2	4	5

Example #13 (Ref # 134-95)
Pump Spray Deodorant

TABLE 12

	A	B	C
Cyclomethicone	36.5	36.5	36.5
Denatured Alcohol	35.2	35.2	35.2
Water	2.7	2.7	2.7
Triclosan	0.2	0.2	0.2
Finsolv SUN	9	--	--
Isopropyl myristate	--	9	-
Isopropyl palmitate	--	--	9
1,3 Butylene glycol	1	1	1
PPG-3 Myristyl Ether	15.5	15.5	15.5

Procedure:

Combine alcohol, water and Triclosan. Mix well. Add balance of ingredients with mixing.

Formulations A, B and C so prepared were tested for skin feel, slip, dryness, emolliency and tackiness on a scale of 1 to 5, with 1 representing the best and 5 representing poor. Results are as follows:

	A	B	C
Skin feel	2	4	3
Slip	2	3	4
Dryness	1	3	3
Emolliency	2	4	4
Tackiness	2	3	4

Example # 14 (Ref # 134-96)
Cream Antiperspirant

TABLE 13

	A	B	C
I. Glyceryl Stearate	6	6	6
Propylene Glycol	1	1	1
Finsolv SUN	4	--	--
Isopropyl Myristate	--	4	--
Isopropyl Palmitate	--	--	4
II. Sodium Magnesium silicate	1	1	1
Aluminium chlorohydrate 50% solution	40	40	40
Water	48	48	48

Procedure:

1. Disperse Sodium Magnesium Silicate in water and heat to 70°C.

2. Blend and heat the oil phase (ingredients of I) to 70°C.

3. Add the ingredients of I to the ingredients of II, with mixing.

4. Cool the cream to 50°C and add Aluminium chlorohydrate.

5. Mix for 30 minutes and package.

Formulations A, B and C so prepared were tested for skin feel, slip, dryness, emoliiency and tackiness on a scale of 1 to 5, with 1 representing the best and 5 representing poor. Results are as follows:

	A	B	C
Skin feel	2	4	4
Slip	2	3	3
Dryness	1	3	4
Emolliency	2	4	3
Tackiness	2	4	4

Example #15 (Ref # 134–100)
Emollient Cleansing Lotion

TABLE 14

	A	B	C
I. Water	80.4	80.4	80.4
Fizul MD 318 C	1	1	1
Glycerin	3	3	3
Carbopol ETD 2001 Resin	0.2	0.2	0.2
Tetrasodium EDTA	0.1	0.1	0.1
II. Finsolv SUN	6.5	--	--
Isopropyl Myristate	--	6.5	--
Isopropyl Palmitate	--	--	6.5
Caprylic/capric Triglycerides	1	1	1
Stearic acid	3	3	3
Glyceryl stearate SE	2	2	2
III. Water	1	1	1
Triethanolamine 99%	0.8	0.8	0.8
IV. Germaben II	1	1	1

Procedure:

Disperse carbopol into water. Add balance of I ingredients and heat to 75°C. Mix II ingredients together and heat to 75°C. Add II to I with mixing. Combine III ingredients, then add to balance and begin cooling. At 40°C, add ingredients of IV and continue cooling to 30°C.

Formulations A, B and C so prepared were tested for slip, skin feel, and emolliency, on a scale of 1 to 5, with 1 representing the best and 5 representing poor. Results are as follows:

	A	B	C
Skin feel	2	4	3
Slip	1	3	3
Emolliency	2	4	4

Example # 16 (Ref # 134-101)
Hand and Body Lotion

EV 983564523

TABLE 15

	A	B	C
I. Water	85.75	85.75	85.75
Carbomer (Ultrez 10)	.15	.15	.15
Sorbitol 70%	2	2	2
Tetrasodium EDTA	.2	.2	.2
II. Finsolv SUN	6.5	-	-
Isopropyl Myristate	-	6.5	-
Isopropyl Palmitate	-	-	6.5
Cetyl alcohol	.7	.7	.7
Stearic acid	1.5	1.5	1.5
Glyceryl stearate SE	.8	.8	.8
Cetearyl alcohol & ceteareth 20	1	1	1
III. Triethanolamine 99%	.9	.9	.9
Germaben II	.3	.3	.3

Procedure:

Disperse carbomer in water. Heat to 70°C. Add sorbitol 70% and tetrasodium EDTA. Weigh all II ingredients together and heat to 70°C. Add the ingredients of II to I with mixing. Add triethanoamine, continue mixing until 45°C. Add Germaben II as a preservative.

Formulations A, B and C so prepared were tested for skin feel, slip and emolliency on a scale of 1 to 5 with 1, representing the best and 5 representing poor. Results are as follows:

	A	B	C
Skin feel	2	4	4
Slip	2	4	3
Emolliency	1	3	3

Example #17 (Ref. # 134-102)
Light Body Lotion

TABLE 16

	A	B	C
I. Finsolv SUN	5	--	--
Isopropyl Myristate	--	5	--
Isopropylpalmitate	--	--	5
Sesame oil	4.4	4.4	4.4
Mineral oil	4	4	4
Glyceral Monostearate	1	1	1
Stearic acid	2.4	2.4	2.4
Myristyl lactate	1	1	1
Propylparaben	0.2	0.2	0.2
II. Water	74.95	74.95	74.95
Glycerin	4.5	4.5	4.5
Triethanolamine 99%	1.1	1.1	1.1
Methylparaben	.15	.15	.15

Procedure:

Mix ingredients of I and heat to 65°C. Mix ingredients of II and heat to 70°C. Add ingredients of I to ingredients of II with mixing, maintaining temperature of 70°C. Mix 15 minutes. Cool with mixing to 25°C.

Formulations A, B and C so prepared were tested for skin feel, slip and emolliency on a scale of 1 to 5, with 1 representing the best and 5 representing poor. Results are as follows:

	A	B	C
Skin feel	2	4	4
Slip	2	5	3
Emolliency	1	3	4

Example #18 (Ref. # 134–104)
2 in 1 Conditioning Shampoo (opaque cream type)

TABLE 17

	A	B	C
I. Water	53.4	53.4	53.4
Propylene Glycol	1.5	1.5	1.5
Magnesium Aluminium Silicate	.25	.25	.25
Xanthum Gum	.25	.25	.25
II. Ammonium lauryl sulfate (28%)	22	22	22
Ammonium laureth sulfate (25%)	10	10	10
Surfine WLL	2	2	2
Sodium chloride	0.5	0.5	0.5
TetraSodium EDTA	0.2	0.2	0.2
Cetrimonium chloride (30%)	0.8	0.8	0.8
III. Aminol HCA	4	4	4
Finsolv SUN	2	--	--
Isopropyl Myristate	--	2	--
Isopropyl palmitate	--	--	2
Cetyl alcohol	0.5	0.5	0.5
Stearyl alcohol	0.5	0.5	0.5
Glycol stearate	2	2	2
IV. DMDM Hydantoin	0.1	0.1	0.1

Procedure:

1. Mix Gums (xanthum gum and magnesium aluminium silicate) together and pre-wet with Propylene Glycol.

2. Add Gums to water with good mixing to disperse. When dispersed, heat mixture to 65°C.

3. Add components of II at 65°C., with mixing, allowing each to become uniformly mixed before adding the next.

4. Add components of III together, heating to 65°C. with mixing until all melted.

5. Add Step 4 ingredients to balance of formula with good mixing and allow to become uniform. Continue mixing while cooling.

6. Add ingredients of IV at 45°C. Cool to 35°C. and discharge.

Table 17-A compares the properties of shampoo preparations of Formulations A, B and C of Example 18. Table 17-B compares foam results for shampoo of formulations A, B and C of Example 18. Table 17-C compares the effects of shampoo of formulations A, B and C of Example 18.

Table 17-A
(Properties of Shampoos A, B, C of Example 18)

Shampoo preparation	Appearance	pH	Viscosity
A	Creamy flowable liquid	6.1	3200
B	Creamy flowable liquid	6.1	2800
C	Creamy flowable liquid	6.1	2650

Table 17-B
Foam results of 2 in 1 Conditioning Shampoo Preparations
Of Formulations A, B and C of Example 18

Shampoo preparation	Initial volume of foam (mls)	Volume after 5 min (mls)	Foam characteristics
A	350	330	Thick dense rich compact foam. No air between bubbles. Soft feel.
B	300	270	Thin, loose, scattered, airy foam. Not compact. No soft feel.
C	300	260	Thin, loose, scattered, airy foam. Not compact. No soft feel.

Procedure: 1% of each formulation was dissolved in 200 mls. of water and shaken in a 500 mls. cylinder with 10 sets of shakes.

TABLE 17-C

Comparison of effects of 2 in 1 Conditioning Shampoo Preparations of Formulations A , B and C of Example 18 on Hair Tresses

	Formulation A	Formulation B	Formulation C
Dry comb	2	5	4
Wet comb	2	4	4
Detangling	2	3	4
Shine/gloss	3	4	4
Dryfeel/Handle	2	4	5

All measurements are on a scale of 1-10, with I representing the best and 10 representing the worst.

Procedure: Rinsed hair tresses under tap water for 15 seconds. Rinsed hair tresses were treated with shampoo. Mixed for 5 minutes. Removed the tresses and rinsed with tap water running on it for 15 seconds. Air dried. Performed wet and dry comb tests.

Example #19 (Ref # 134-106)
Clear Conditioning Shampoo

TABLE # 18 (For Example #19)

	A	B	C
Water	51.2	51.2	51.2
Sodium Laureth Sulfate 25%	28.0	28.0	28.0
Tauranol WS conc	15.0	15.0	15.0
Aminol HCA	4.0	4.0	4.0
Finsolv SUN	1.0	--	--
Isopropyl Myristate	--	1.0	--
Isopropyl Palmitate	--.	--	1.0
Crothix	0.3	0.3	0.3
DMDM Hydantoin	0.2	0.2	0.3

Procedure:

Charge water and heat to 75^0C. Add all ingredients in order except DMDM Hydantoin, mixing

well. Cool to 45°C and add DMDM Hydantoin. Cool to room temperature.

Table 18-A compares the properties of shampoo preparations of formulations A, B & C of Example 19. Table 18-B compares properties of clear conditioning shampoo formulations A, B & C of Example 19. Table 18-C compares the effects of shampoo of formulations A, B & C on hair tresses.

TABLE # 18-A
Properties of clear conditioning shampoo of formulations A, B & C of Example 19

Shampoo Properties	Appearance	Clarity	Viscosity
A	Clear Gel	Clear	12000
B	Clear Gel	Clear	9000
C	Clear Gel	Clear	8500

TABLE 18-B
Foam Results of Clear Conditioning Shampoo Preparations of Formulations A, B & C of Example 19

Shampoo Formulation	Initial volume of Foam (mls)	Volume after 5 Min (mls)	Foam Characteristics
A	350	300	Thick, dense stable foam compact. No gaps in-between bubbles.
B	300	200	Thin, loose, scattered; disappear quickly, gaps in-between bubbles.
C	300	210	Thin, loose, scattered, disappear quickly; gaps in-between bubbles.

Procedure: 1% of the respective formulation was dissolved in 200 mls of water and shaken in a 500 ml. cylinder with 10 sets of shakes.

TABLE 18-C

Comparison of Effects of Clear Conditioning Shampoo Preparations of Formulations A , B & C

	A	B	C
Dry Comb	4	5	5
Wet Comb	3	6	4
Detangling	2	5	3
Shine / Gloss	2	4	3
Dry feel /Handle	3	3	3

All measurements are on a scale of 1 to10, with 1 representing the best and 10 representing the worst.

Procedure: Rinsed hair tresses under tap water for 15 seconds. Rinsed hair tresses were treated with shampoo, mixed for 5 minutes. Removed the tresses and rinsed with tap water running on it for 15 seconds, then air dried. Performed wet and dry comb.

Example # 20 (Ref # 134–107)
Shower and Bath Gel

TABLE 19

		A	B	C
I	Water	48.0	48.0	48.0
	1,3 Butylene Glycol	4.0	4.0	4.0
	Tetra sodium EDTA	0.1	0.1	0.1
	DL Panthenol	0.5	0.5	0.5
	Sodium Laureth – sulfate	20.0	20.0	20.0
	Aminol HCA	5.0	5.0	5.0
	Fizul MD 318C	4.0	4.0	4.0
	Surfine AZI-A	2.0	2.0	2.0
	Finsolv SUN	2.0	--	--
	Isopropyl Myristate	--	2.0	--
	Isopropyl Palmitate	--	--	2.0
II	Crothix	1.0	1.0	1.0
	Sucrose Cocoate	1.0	1.0	1.0
III	DMDM Hydantoin 55%	0.4	0.4	0.4
	Citric acid 25% to pH 6.2	qs	qs	qs

Procedure:

Heat water to 50°C. and add all part I ingredients in order, allowing each to mix well.

Raise temperature to 70°C. and add part II ingredients allowing each to mix well. Cool to 45°C and add ingredients of part III. Cool to below 35°C and adjust pH to 6.2. Pour warm.

Table 19-A compares the properties of shower & bath gel preparations of formulations A, B and C of Example 20.

Table 19-A

Properties of Shower and Bath Gel formulations A, B and C of Example 20

Shower & Bath Gel	Appearance	Clarity	Viscosity
A	Clear Gel	Clear	7500
B	Clear thin Gel	Clear	5200
C	Clear Thin Gel	Clear	5080

Table 19-B

Foam Results of Shower and Bath Gel Preparations of Formulations A, B and C of Example 20

Shower & Bath Gel Formulation	Initial Volume Of Foam (mls)	Volume after 5 min (mls)	Foam Characteristics
A	360	300	Thick, dense, stable foam; compact, no gaps in-between bubbles.
B	300	210	Thin, small bubbles; scattered foam; gaps in- between bubbles.
C	300	200	Thin, small bubbles; scattered foam; gaps in- between bubbles.

Example # 21 (Ref # 134-108)
Foaming Facial Cleanser Cream

TABLE 20 (For Example #21)

		A	B	C
I	Tauranol I -78 (C)	20	20	20
	Finsolv SUN	2	--	--
	Isopropyl Myristate	--	2	--
	Isopropyl Palmitate	--	--	2
	1,3 Butylene Glycol	1	1	1
	Water	70	70	70
II	Myristic acid	3	3	3
	Cetyl Alcohol	2	2	2
	Glyceryl Stearate	2	2	2

Procedure:

Combine the contents of I and heat to 75°C with gentle stirring until an homogeneous system is formed. Avoid aeration, separately combine II and heat with mixing to 60°C. Add the molten II slowly to the vortex of I and continue stirring until cooled below 40°C. Resultant product builds viscosity and pearlescence in 48 hrs.

Table A compares the properties of facial cleanser cream of formulations A, B and C of Example 21.

TABLE 20-A

Foaming Cleanser cream	Appearance	Viscosity
A	Creme	6000
B	Creme	4800
C	Creme	4500

TABLE 20-B

Foam Results of Foaming Facial Cleanse Creme.
Preparation of Formulations A, B and C of Example 21

Formula	Initial volume of Foam (mls)	Volume after 5 mins (mls)	Foam Characteristics
A	250	200	Thick, dense, stable foam; compact, no gap in-between bubbles.
B	220	180	Thin, loose foam; scattered, disappear quickly, gap in- between bubbles.
C	220	170	Thin, loose foam, scattered, disappear quickly, gap in- between bubbles.

Table 21 identifies the trade or generic names of the ingredients used in the examples set forth above.

The examples demonstrate the uses of the ester of the invention in personal care products, specifically soap bars, transparent combo bars, handy and body lotion with sunscreen, waterproof sunscreen lotion, high SPF sunscreen lotion, sunblock cream, non-whitening antiperspirant stick, deodorant stick, pump spray deodorant, cream antiperspirant, emollient cleansing lotion, hand and body lotion, light body lotion, 2 in 1 conditioning shampoo (opaque cream type) clear conditioning shampoo, shower and bath gel, and foaming facial cleanser cream. These are considered to be representative of formulations wherein the ester of the invention finds application.

The formulations prepared using the compositions of the present invention have outstanding attributes in that the phenylethyl benzoate ester of the invention, when utilized as a solvent, solubilizes sunscreen actives in the ratio of about 3:1 (25% strength concentration) to 6:1 (14% strength/concentration).

TABLE 21
Identification Of Trade Or Generic Listed Preparation Ingredients

Trade or Generic Material	Identification	Source
Finsolv SUN	Phenyl Ethyl Benzoate	Finetex Inc., NJ
Aminol HCA	Cocoamide	Finetex Inc., NJ
Finsolv SLB-101	Dimethicone PEG/PPG-20/30 Benzoate	Finetex Inc., NJ
Finsolv SLB-201	Dimethicone PEG-8 Benzoate	Finetex Inc., NJ
Finsolv TN	C12 - C15 Alkyl Benzoate	Finetex Inc., NJ
Finester EH 25	C12 - C15 Alkyl Octanoate	Finetex Inc., NJ
Finsolv PL-62	Poloxmer 182 Dibenzoate	Finetex Inc., NJ
Finester DOM-R	Diethylhexyl Maleate	Finetex Inc., NJ
Finsoln EMG-20	Methyl Gluceth - 20 Benzoate	Finetex Inc., NJ
Finsolv PL-355	Poloxmer 105 Benzoate	Finetex Inc., NJ
Finsolv BCO-115	Castor oil Benzoate	Finetex Inc., NJ
Finsolv BCR-111	Cetyl Ricinoleate Benzoate	Finetex Inc., NJ
Finsolv BOHS-111	Ethylhexyl Hydroxy stearate Benzoate	Finetex Inc., NJ
Crothix	PEG-150 Pentaerythrityl tetrastearate	Croda Inc., NJ
Tauranol I 78 C	Sodium Cocyl Isethionate	Finetex Inc., NJ
Tauranol WS (cons)	Sodium Methyl cocyl Taurate	Finetex Inc., NJ
Surfine- AZI-A	Nonoxynol-10 Carboxylate	Finetex Inc., NJ
Natrlfine 137-T	Behenyl Benzoate, Titanium Dioxide	Finetex Inc., NJ
Solulan 16	Laneth-16, Celeth 16, oleth 16 & Steareth	Amerchol Edison, NJ
Drakeol 9	Light Mineral Oil	Penreco, PA
Hystrene 9718	Stearic Acid	Witco Corporation, TX
Hampine Na 4	Ethylene Diamine Tetraacetic Sodium Salt	Hampshire Chemical Corp, N.H.
Polyglycol E400	Polyethylene Glycol 400	D.V.C Limited Inc., NJ
Sodium Stearate C7	Sodium Stearate	Witco Corporation, TX
Dow Corning Fluid 244/344	cyclomethicone	Dow Corning, MI
Dow Corning Fluid 200	Dimethicone	Dow Corning, MI
Carbomer	Carbopol ETD 2001 Resin	B.F.Godrich, OH
Brij 78	Steareth –20	ICI, DE
Triclosan	Irgasan DP 300	Ciba Specialty Chemicals, NC
Dow Corning Fluid 345	Cyclomethicone	Dow Corning, MI
Adol 62	Stearyl Alchol	Witco Corporation, TX
Castor Wax MP 70	Hydrogenerated Castor oil	Cas Chem, NJ
Reach AZP 908	Aluminum Zirconium Tetrachloro-Glycine	Reheis Inc., NJ
Silica	Cabosil M - 5	Cabot Corp, IL
Germaben II	Diazolidinyl urea	ISP, NJ
Escalol 567	Benzophenone-3	ISP, NJ
Escalol 587	Octylsalicylate	ISP, NJ

Parsol MCX	Octylmethoxycinnamate	Roche Vitamins, NJ
Witconol 2314	Isopropyl myristate	Witco Corporation, TX
Witconol 2316	Isopropyl palmitate	Witco Corporation, TX
Finsolv SB	Isostearyl benzoate	Finetex Inc., NJ
Finsolv PG22	Dipropylene Glycol Dibenzoate	Finetex Inc., NJ
Finsolv BOD	Octyldodecyl Benzoate	Finetex Inc., NJ

It will be understood that the embodiments described herein are merely exemplary and that a person skilled in the art may make many variations and modifications without departing from the spirit and scope of the invention. All such variations and modifications are intended to be included in the scope of the invention as described herein.